

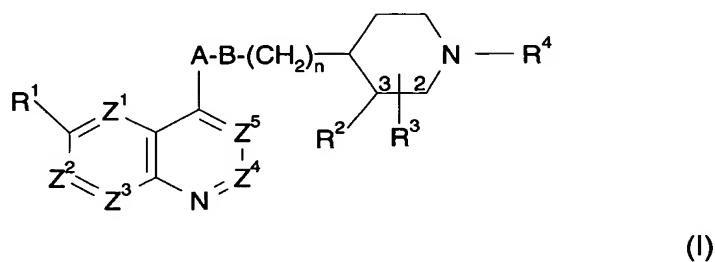
Amendments to the claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

Claims 1-12 (Cancelled).

13. (Currently Amended) A compound of formula (I) or a pharmaceutically acceptable salt, solvate and/or N-oxide thereof:



wherein:

one of Z¹, Z², and Z³ is N and Z⁴ and Z⁵ the remainder are CH;

R¹ is hydrogen, hydroxy; (C₁₋₆) alkoxy optionally substituted by (C₁₋₆) alkoxy, amino, piperidyl, guanidino or amidino optionally N-substituted by one or two (C₁₋₆) alkyl, acyl or (C₁₋₆) alkylsulphonyl groups, NH₂CO, hydroxy, thiol, (C₁₋₆) alkylthio, heterocyclithio, heterocyclxyloxy, arylthio, aryloxy, acylthio, acyloxy or (C₁₋₆) alkylsulphonyloxy; (C₁₋₆) alkoxy-substituted (C₁₋₆) alkyl; halogen; (C₁₋₆) alkyl; (C₁₋₆) alkylthio; nitro; trifluoromethyl; azido; acyl; acyloxy; acylthio; (C₁₋₆) alkylsulphonyl; (C₁₋₆) alkylsulphoxide; arylsulphonyl; arylsulphoxide or an amino, piperidyl, guanidino or amidino group optionally N-substituted by one or two (C₁₋₆) alkyl, acyl or (C₁₋₆) alkylsulphonyl groups;

either R² is hydrogen; and

R³ is in the 2- or 3-position and is hydrogen or (C₁₋₆) alkyl or (C₂₋₆) alkenyl optionally substituted with 1 to 3 groups selected from:

thiol; halogen; (C₁₋₆) alkylthio; trifluoromethyl; azido; (C₁₋₆) alkoxy carbonyl; (C₁₋₆) alkyl carbonyl; (C₂₋₆) alkenyloxy carbonyl; (C₂₋₆) alkenyl carbonyl; hydroxy optionally substituted by (C₁₋₆) alkyl, (C₂₋₆) alkenyl, (C₁₋₆) alkoxy carbonyl, (C₁₋₆) alkyl carbonyl, (C₂₋₆) alkenyloxy carbonyl, (C₂₋₆) alkenyl carbonyl or aminocarbonyl wherein the amino group is optionally substituted by (C₁₋₆) alkyl, (C₂₋₆) alkenyl, (C₁₋₆) alkyl carbonyl or (C₂₋₆) alkenyl carbonyl; amino optionally mono- or disubstituted by

(C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl, (C₂₋₆)alkenylcarbonyl, (C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkylsulphonyl, (C₂₋₆)alkenylsulphonyl or aminocarbonyl wherein the amino group is optionally substituted by (C₁₋₆)alkyl or (C₂₋₆)alkenyl; aminocarbonyl wherein the amino group is optionally mono- or disubstituted by (C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl or (C₂₋₆)alkenylcarbonyl]; oxo; (C₁₋₆)alkylsulphonyl; (C₂₋₆)alkenylsulphonyl; or (C₁₋₆)aminosulphonyl wherein the amino group is optionally substituted by (C₁₋₆)alkyl or (C₂₋₆)alkenyl; or

R³ is in the 3-position and R² and R³ together are a divalent residue =CR⁵¹R⁶¹ where R⁵¹ and R⁶¹ are independently selected from H, (C₁₋₆)alkyl, (C₂₋₆)alkenyl, aryl(C₁₋₆)alkyl and aryl(C₂₋₆)alkenyl, any alkyl or alkenyl moiety being optionally substituted by 1 to 3 groups selected from those listed above for substituents on R³;

R⁴ is a group -CH₂-R⁵ in which R⁵ is selected from:

(C₃₋₁₂)alkyl; hydroxy(C₃₋₁₂)alkyl; (C₁₋₁₂)alkoxy(C₃₋₁₂)alkyl; (C₁₋₁₂)alkanoyloxy(C₃₋₁₂)alkyl; (C₃₋₆)cycloalkyl(C₃₋₁₂)alkyl; hydroxy-, (C₁₋₁₂)alkoxy- or (C₁₋₁₂)alkanoyloxy-(C₃₋₆)cycloalkyl(C₃₋₁₂)alkyl; cyano(C₃₋₁₂)alkyl; (C₂₋₁₂)alkenyl; (C₂₋₁₂)alkynyl; tetrahydrofuryl; mono- or di-(C₁₋₁₂)alkylamino(C₃₋₁₂)alkyl; acylamino(C₃₋₁₂)alkyl; (C₁₋₁₂)alkyl- or acyl-aminocarbonyl(C₃₋₁₂)alkyl; mono- or di- (C₁₋₁₂)alkylamino(hydroxy) (C₃₋₁₂)alkyl; optionally substituted phenyl(C₁₋₂)alkyl, phenoxy(C₁₋₂)alkyl or phenyl(hydroxy)(C₁₋₂)alkyl; optionally substituted diphenyl(C₁₋₂)alkyl; optionally substituted phenyl(C₂₋₃)alkenyl; optionally substituted benzoyl or benzoylmethyl; optionally substituted heteroaryl(C₁₋₂)alkyl; and optionally substituted heteroaroyl or heteroaroylmethyl;

n is 0, 1 or 2;

A is NR¹¹, O, S(O)_x or CR⁶R⁷ and B is NR¹¹, O, S(O)_x or CR⁸R⁹ where x is 0, 1 or 2 and wherein:

each of R⁶ and R⁷ R⁸ and R⁹ is independently selected from: H; thiol; (C₁₋₆)alkylthio; halo; trifluoromethyl; azido; (C₁₋₆)alkyl; (C₂₋₆)alkenyl; (C₁₋₆)alkoxycarbonyl; (C₁₋₆)alkylcarbonyl; (C₂₋₆)alkenyloxycarbonyl; (C₂₋₆)alkenylcarbonyl; hydroxy, amino or aminocarbonyl optionally substituted as for corresponding substituents in R³; (C₁₋₆)alkylsulphonyl; (C₂₋₆)alkenylsulphonyl; or (C₁₋₆)aminosulphonyl wherein the amino group is optionally substituted by (C₁₋₆)alkyl or (C₁₋₆)alkenyl;

or R⁶ and R⁸ together represent a bond and R⁷ and R⁹ are as above defined;
or R⁶ and R⁸ together represent -O- and R⁷ and R⁹ are both hydrogen;
or R⁶ and R⁷ or R⁸ and R⁹ together represent oxo;
and each R¹¹ is independently H, trifluoromethyl, (C₁₋₆)alkyl, (C₁₋₆)alkenyl, (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, aminocarbonyl wherein the amino group is optionally mono- or di-substituted by (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₁₋₆)alkenyloxycarbonyl, (C₂₋₆)alkenylcarbonyl, (C₁₋₆)alkyl or (C₁₋₆)alkenyl;

provided that A and B cannot both be selected from NR¹¹, O and S(O)_X and when one of A and B is CO the other is not CO, O or S(O)_X.

14. (Previously presented) A compound according to claim 13 wherein Z¹ is N and Z^{2-Z⁵} are each CH.

15. (Previously presented) A compound according to claim 13 wherein R¹ is methoxy, amino(C₃₋₅)alkyloxy, guanidino(C₃₋₅)alkyloxy or fluoro.

16. (Previously Presented) A compound according to claim 13 wherein R³ is in the 3-position and is aminocarbonyl(C₁₋₆)alkyl, hydroxy(C₁₋₆)alkyl or 1,2-dihydroxy(C₂₋₆)alkyl optionally substituted on the hydroxy group(s).

17. (Previously Presented) A compound according to claim 13 wherein AB is NHCO, NHCOCH₂ or CH₂CH(OH)CH₂.

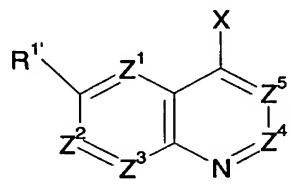
18. (Previously Presented) A compound according to claim 13 wherein R⁴ is (C₅₋₁₀)alkyl, unsubstituted phenyl(C₂₋₃)alkyl or unsubstituted phenyl(C₃₋₄)alkenyl.

19. (Currently Amended) A compound according to claim 13 selected from:
1-Heptyl-4-(6-methoxy-1,5-naphthyridin-4-yl)aminocarbonyl piperidine;
[3R, 4S]-1-Heptyl-3-ethenyl-4-N-(6-methoxy-1,5-naphthyridin-4-yl)-piperidineacetamide;
[3R,4S]-1-Heptyl-3-ethenyl-4-[2-(R,S)-hydroxy-3-(6-methoxy-1,5-naphthyridin-4-yl)propyl]piperidine;
[3R,4S]-1-Heptyl-4-N-(6-methoxy-1,5-naphthyridin-4-yl)-3,4-piperidinediacetamide;
and
[3R,4S]-1-Heptyl-4-N-(6-methoxy-1,5-naphthyridin-4-yl)-3-(1-(R/S)-2-dihydroxyethyl)-piperidineacetamide;

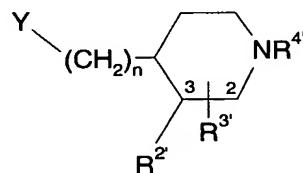
or a pharmaceutically acceptable salt, solvate, and/or N-oxide thereof of any of the foregoing compounds.

20. (Currently Amended) A process for preparing compounds of formula (I), or a pharmaceutically acceptable salt, solvate, and/or N-oxide thereof according to claim 13, which process comprises:

(a) reacting a compound of formula (IV) with a compound of formula (V):



(IV)



(V)

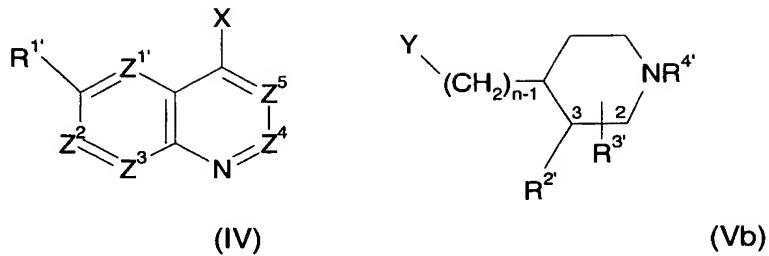
wherein Z¹, Z², Z³, Z⁴ and Z⁵, m, n, R¹, R², R³ and R⁴ are as defined in formula (I), and X and Y may be the following combinations:

- (i) X is M and Y is CH₂CO₂R^X
- (ii) X is CO₂RY and Y is CH₂CO₂R^X
- (iii) one of X and Y is CH=SPh₂ and the other is CHO
- (iv) X is CH₃ and Y is CHO
- (v) X is CH₃ and Y is CO₂R^X
- (vi) X is CH₂CO₂RY and Y is CO₂R^X
- (vii) X is CH=PR^Z₃ and Y is CHO
- (viii) X is CHO and Y is CH=PR^Z₃
- (ix) X is halogen and Y is CH=CH₂
- (x) one of X and Y is COW and the other is NHR^{11'}
- (xi) one of X and Y is (CH₂)_p-V and the other is (CH₂)_qNHR^{11'}, (CH₂)_qOH, (CH₂)_qSH or (CH₂)_qSCOR^X where p+q=1
- (xii) one of X and Y is CHO and the other is NHR^{11'}
- (xiii) one of X and Y is OH and the other is -CH=N₂

in which M is an alkali metal; V and W are leaving groups, R^X and R^Y are (C₁₋₆)alkyl and R^Z is aryl or (C₁₋₆)alkyl;

or

(b) reacting a compound of formula (IV) with a compound of formula (Vb):



wherein Z¹, Z², Z³, Z⁴ and Z⁵, m, n, R¹, R², R³ and R⁴ are as defined in formula (I), X is CH₂NHR¹¹ and Y is CHO or COW or X is CH₂OH and Y is -CH=N₂;

in which R¹¹', R¹', R²', R³' and R⁴' are R¹¹, R¹, R², R³ and R⁴ or groups convertible thereto, wherein R¹', R²', R³' and R⁴' are R¹, R², R³ and R⁴ optionally containing hydroxyl protecting groups, or R³' is a carboxy ester containing group, or R⁴' is H or a protecting group, R¹¹' is R¹¹, and thereafter optionally or as necessary converting R¹¹', R¹', R²', R³' and R⁴' to R¹¹ R¹¹, R¹, R², R³ and R⁴, converting A-B to other A-B, interconverting R¹¹, R¹, R², R³ and/or R⁴ and forming a pharmaceutically acceptable salt, solvate, and/or N-oxide thereof.

21. (Currently Amended) A pharmaceutical composition comprising a compound of formula (I) or a pharmaceutically acceptable salt, solvate, and/or N-oxide thereof according to claim 13, and a pharmaceutically acceptable carrier.
22. (Currently Amended) A method of treatment of bacterial infections in mammals, particularly in man, which method comprises the administration to a mammal in need of such treatment of an effective amount of a compound of formula (I) or a pharmaceutically acceptable salt, solvate, and/or N-oxide thereof according to claim 13.
23. (Currently amended) A compound according to claim 15, wherein R¹ is methoxy.